



Space Science Enterprise

Strategic Planning 2003

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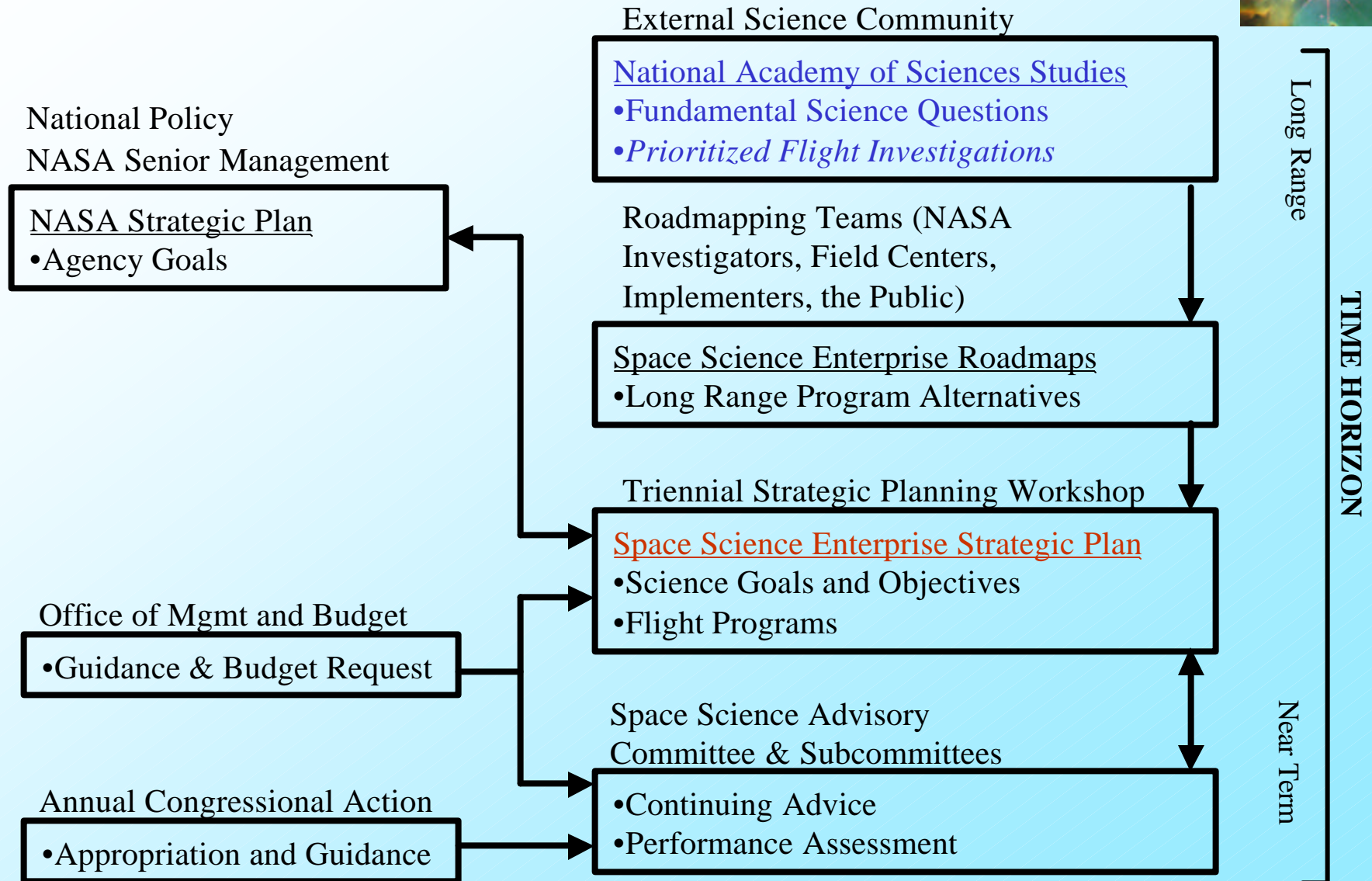
July 2001

Strategic Planning Context



- **GPRA requires Agency 5-year Plan, updated every 3 years**
 - Flow-down/flow-up relationship with Enterprise plans
- **Many purposes for the Space Science Enterprise Strategic Plan**
 - Science Community--documents consensus on goals and priorities
 - NASA OSS--reference for programmatic decision-making
 - NASA Agency-level--for NASA strategic Plan (and GPRA)
 - OMB and Congress--tool for program and budget advocacy
 - The Public--handbook on what space science is going to do and why
- **Enterprise Plan is founded on broad science community input**
- **2000 Plan was evolved from the 1997 Plan**
 - goal: scientific continuity, with incremental improvement but familiar “look and feel”

Space Science Enterprise Strategic Planning



Program Architecture Strategy



1. Firmly anchor flight program in strategic science goals and objectives
 - maintain a strong research base (SR&T)
2. Aggregate consecutive missions that address a cluster of science goals into “mission lines”
 - maintain and extend existing lines
 - start new lines by identifying compelling “pathfinder” mission concepts

Advantages of science-based mission lines:

- better political and public advocacy via an integrated scientific “package”
 - improved continuity in budget and technology planning
3. Within a line, fly successive missions as science priorities dictate and available resources and technological capability permit

General SP 2003 Approach



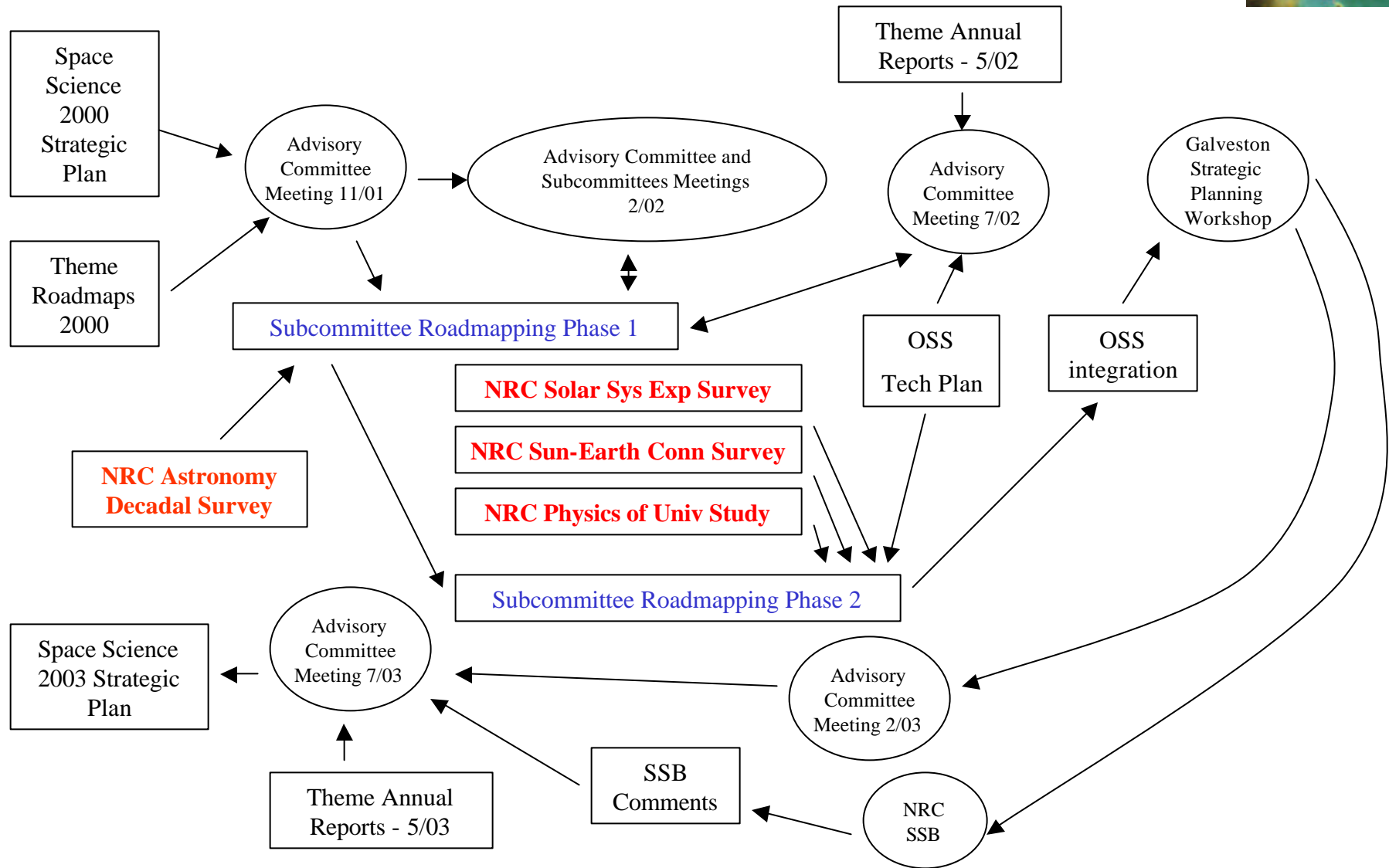
- **General approach similar to 1997, 2000 plans**
- **Renewed attempt to issue in September**
 - more coordination with Agency plan development may be required
- **New feature: solar system exploration and Sun-Earth connection surveys by NRC**
 - similar to astronomy “decadal surveys”: will emphasize community outreach and prioritization
 - focus on science objectives, missions also to be addressed
- **Divide roadmapping into two phases**
 - phase 1: collection of mission candidates and characterization; technical and cost estimation
 - phase 2: taking into account NRC science survey results, formulate theme mission queue recommendations

General SP 2003 Approach



- **General approach similar to 1997, 2000 plans**
- **Renewed attempt again to issue in September**
 - more coordination with Agency plan development may be required
- **New this time for astronomy and astrophysics:**
 - McKee-Taylor survey report available at the beginning of the process
 - Turner Committee on Physics of the Universe underway; will focus on science objectives, but missions may also be addressed
- **Divide roadmapping activities into two phases**
 - phase 1: collection of mission candidates and characterization; technical and cost estimation
 - phase 2: taking into account new NRC results, formulate theme mission queue recommendations

Provisional 2003 Strategic Planning Process



Space Science 2003 Strategic Plan Provisional Schedule



- Initiate NRC science surveys Jan 01
- Initiate roadmap phase 1 activities Jul 01
- NRC science survey results available Apr/May 02
- Initiate roadmap phase 2 activities May 02
- Roadmapping results due to HQ Sep 02
- Consensus workshop Nov 02
- First plan draft circulated for review (SSB, SScAC) Feb 03
- SSB comments on draft due May 03
- Final SScAC review Jul 03
- Plan goes into production Aug 03
- Plan released Sep 03

NRC Study: “A New Strategy for Solar System Exploration”



A community assessment of the scientific priorities of the U.S. planetary science research programs; will define

- a "big picture" of solar system exploration--what it is, how it fits into other scientific endeavors, and why it is a compelling goal today
- a broad survey of the current state of knowledge about our solar system
- the top-level scientific questions that should provide the focus for solar system exploration today; these will be key scientific inputs to roadmapping activity
- a prioritized list of the most promising avenues for flight investigations and supporting ground-based activities
- Study will be conducted by four panels (Inner Planets, Giant Planets, Large Satellites, and Primitive Bodies) and a steering group

NRC Study: Solar and Space Physics--A Community Assessment and Strategy for the Future



An assessment of science status and strategic directions in solar physics, space physics, and Sun-Earth connections; will

- survey current state of knowledge
- identify future scientific priorities
- recommend most promising flight investigations and supporting ground research
- Time scale to be approximately ten years
- Emphasis on broad outreach to the scientific community
- Focus on science goals, some input on specific flight activities
- Study will be conducted by steering group plus five panels:
 - magnetosphere-ionosphere-atmosphere interactions
 - solar-wind magnetosphere interactions
 - solar and heliospheric physics
 - theory, computation, and data exploration
 - education and society

NRC Committee on the Physics of the Universe



Assessment of science at the intersection of physics and astronomy will:

- Focus on opportunities for breakthroughs in understanding the birth, evolution and destiny of the Universe, the laws that govern it, and even the nature of space and time
- Encompass astrophysical and cosmological phenomena that give insight into fundamental physics that is relevant to understanding the universe and the diversity objects within it.
- Address opportunities to explore new science through:
 - new techniques for observing phenomena in extreme environments and new regimes
 - new applications of fundamental physics to modeling and simulating the origin, evolution, and fate of the universe
 - understanding fundamental physics by using space and the cosmos as a laboratory full of experiments that could never be implemented on the Earth